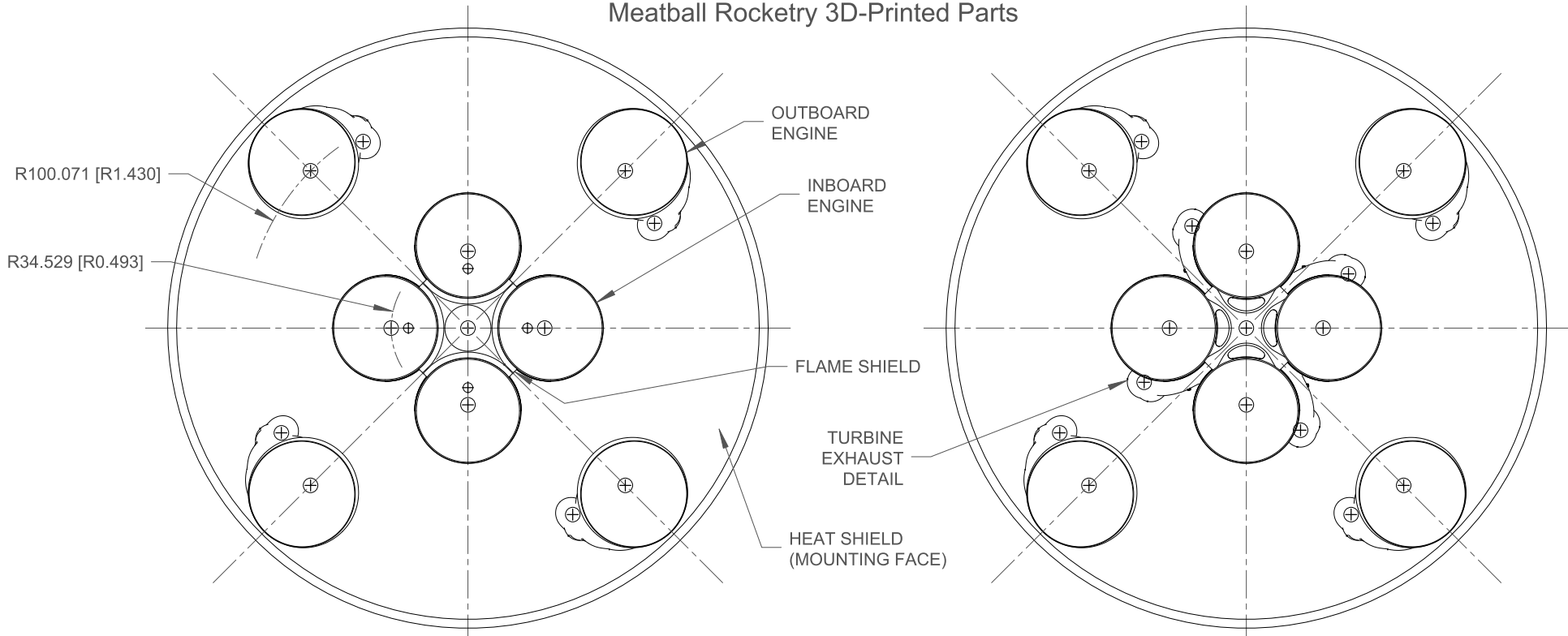


# H-1 ENGINE PLACEMENT FOR 1:70 SCALE SATURN I AND IB -- PRINT PDF AT 'ACTUAL SIZE'

## Meatball Rocketry 3D-Printed Parts



**EARLY FLAME SHIELD DESIGN (SA-5 - SA-202)**

**LATER FLAME SHIELD DESIGN (SA-203 - SA-210)**

**GENERAL INFO:**

Engine mounting face is at full-scale STA 51.75 (lower face of heat shield in Block II and Saturn IB vehicles).

Parts have 3/32" studs for assembly. Stud center point derived from intersection of full-scale component's center line and heat shield lower face.

Modelers wanting to mount parts on recessed surfaces can add shims to the tops of parts to maintain position (NOTE: at 1:70 scale, heat shield is 0.032" thick).

Both versions share a common Outboard engine design.

**ASSEMBLY OF EARLY VERSION:**

Center Flame Shield may need to be installed prior to Inboard engines, though a different assembly order may be possible. Test-fit parts to determine easiest order of assembly. Inboards have additional 1/16" alignment stud.

Attach Outboard engines last.

NOTE: For use in SA-1 thru SA-4, add shims for best scale look (heat shield face at STA 54.0).

**ASSEMBLY OF LATER VERSION:**

Assemble Turbine Exhaust details and Inboard engines, carefully removing sprue.

Center Flame Shield may be installed before or after Inboard engines. Test-fit parts into model to determine easiest order of assembly.

Attach Outboard engines last.

**ALL DIMENSIONS IN INCHES  
SHOWN AS 'FULL SCALE [MODEL]'**

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**ALWAYS TEST FIT BEFORE GLUING. FOR BEST FIT, PART(S) OR LAYOUT MAY NEED SLIGHT ADJUSTMENT DUE TO VARIATIONS BETWEEN CAD MODEL AND FINAL PRINTED PARTS.**